configuration messages are dispatched, the process proceeds to step S611 where the configuration messages are received at each of the programmable probe devices and the programmable probe devices employ the parameters contained therein to perform probing operations at the polling interval identified in the configuration message. Subsequently the configuration process ends.

[59] The processes and control mechanisms set forth in the present description may be implemented using conventional general purpose microprocessors in the routers that are programmed according to the teachings of the present specification, as will be appreciated to those skilled in the relevant art(s). Appropriate software coding can readily be prepared by skilled programmers based on the teachings of the present disclosure, as will also be apparent to those skilled in the relevant art(s).

[60] The present invention thus also includes a computer-based product that may be hosted on a storage medium and include instructions that can be used to program a computer to perform a process in accordance with the present invention. The storage medium may include, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, flash memory, magneto or optical cards, or any type of media suitable for storing electronic instructions.

IN THE CLAIMS:

Please amend claims 1-9, and 12-23, by way of replacement, as follows. A marked-up version of the amended claims is enclosed in the Appendix, submitted herewith.

1. (Amended) A probing router, comprising:

a routing engine configured to forward packets to a communications network via a communication network port; and

a probe mechanism configured to generate and send a probe message through said communication network port to the communication network at a time T1 over a communication channel.

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2. (Amended) The probing router of Claim 1, wherein said probe mechanism is configured to receive a reply probe message at a second time, T2, sent by a destination router in response to receiving said probe message with a remote latency indicator therein so that service level agreement characteristics may subsequently be derived by comparing T1, T2 and the remote latency indicator.

3. (Amended) The probing router of Claim 2, further comprising:

a memory,

wherein the probe mechanism is configured to identify and store in the memory the service level agreement characteristics.

4. (Amended) The probing router of Claim 1, wherein said communications channel includes a tunnel channel in a virtual private network.

5. (Amended) The probing router of Claim 2, wherein said reply probe message includes a data field configured to hold the remote latency indicator that represents an amount of time between when said destination router received said probe message and when said destination router sent said reply probe message.

6. (Amended) The probing router of Claim 1, wherein a polling interval at which said probe mechanism sends said probe message comprises a remotely programmable setting.

7. (Amended) The probing router of Claim 3, wherein said probe mechanism is configured to send at least one of T1, T2, and the remote latency indicator to a probe poller device that calculates service level agreement statistics.

8. (Amended) The probing router of Claim 7, wherein said probe mechanism is configured to calculate service level agreement statistics based on T1, T2, and the remote latency,

said service level agreement statistics including at least one of a network availability statistic and a packet loss rate.

9. (Amended) A computer-readable medium carrying one or more sequences of one or more instructions for sending a probe message, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

generating a probe message via a source probing router; and

sending said probe message via said source probing router over a communication channel.

12. (Amended) The computer-readable medium of Claim 11, wherein when the one or more instructions are executed by the one or more processors cause the one or more processors to further perform the step of:

calculating service level agreement statistics associated with the communication channel being part of a virtual private communication network from T1, T2 and said remote latency indicator.

13. (Amended) The computer-readable medium of Claim 9, wherein said communication channel includes a communication channel of a virtual private network.

14. (Amended) A communication system for gathering traffic statistics, comprising:

a probing router configured to generate and send a probe message and prepare performance statistics information;

a probe poller processor configured to receive performance statistics information collected by a probing router that generates and sends a probe message through a communication channel; and

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a reporting mechanism coupled to said probe poller processor and configured to present a compilation of said performance statistics information for comparison against performance thresholds of a service level agreement.

15.   (Amended)   The system of Claim 14, wherein said communication channel is included in a virtual private network.

16.   (Amended)   The system of Claim 14, wherein said probing router is included within a customer premise.

17.   (Amended)   The system of Claim 14, wherein said reporting mechanism is configured to report said performance statistics information in at least one of a printed form and a graphically displayed form.

18.   (Amended)   The system of Claim 14, wherein said reporting mechanism is configured to report said performance statistics on an Internet web site.

19.   (Amended)   The system of Claim 14, further comprising:

a virtual private network builder configured to receive topology information regarding an assignment of probing routers to a virtual private network and produce a control signal to be distributed to respective probing routers, said probing router being one of said probing routers.

20.   (Amended)   The system of Claim 19, wherein said control signal includes a polling interval indicator that sets a polling interval at which said probing router sends said probe message.

21.   (Amended)   The system of Claim 14, wherein said probe poller processor is configured to calculate at least one of an availability and a packet loss rate of said in-band communication channel from said performance statistics information.

22.   (Amended)   A probing router, comprising: